

REMARKS

I. Introduction

Claims 17 to 36 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

II. Rejection of Claims 28 to 31 Under 35 U.S.C. § 112

Claims 28 to 31 were rejected under 35 U.S.C. § 112, second paragraph as indefinite as allegedly failing to particularly point out and distinctly claim the subject matter of the invention. In this regard, the Examiner stated that “[s]ince the concentration of the binder solution is not defined, these ratios are ambiguous.” However, page 6, lines 1 to 17, of the specification makes clear that the concentration of the solution is between 0.5 to 2.0% by weight. One skilled in the art would understand from the Specification that the ceramic powder and the dispersing agent solution are homogenized at a concentration of the solution being between 0.5 to 2.0% by weight.

In view of the foregoing, it is respectfully submitted that claims 28 to 31 fully comply with the requirements of 35 U.S.C. § 112, and withdrawal of this rejection is respectfully requested.

III. Rejection of Claim 17, 19 to 22, and 28 to 32 Under 35 U.S.C. § 103(a)

Claims 17, 19 to 22, and 28 to 32 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,057,360 (“Osaka et al.”) in view of WO 2001/044142 (“Scheying et al.”), or U.S. Patent Application Publication No. 2003/0098529 (“Drumm et al.”), or U.S. Patent No. 6,533,966 (“Nonninger et al.”). It is respectfully submitted that the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al., does not render unpatentable these claims for at least the following reasons.

Claim 17 relates to a method for preparing ceramic green compacts for ceramic components including, *inter alia*, preparing a second dispersion by homogenizing the first dispersion and the binder solution. According to the present claim, after a first dispersion is prepared by homogenizing a ceramic powder and the dispersing agent solution, and subsequent deagglomeration, a second dispersion is

prepared by homogenizing the first dispersion and a binder solution. The first dispersion, according to step c) of claim 17, is prepared by homogenizing a ceramic powder and the dispersing agent solution. The dispersing agent solution, according to step a) of claim 17, is prepared by homogenizing one or more dispersing agents in combination with an organic acid in a solvent mixture. Thus, the first dispersion includes components of a ceramic powder, one or more dispersing agents, and an organic acid. According to step d) of claim 17, a second dispersion is then prepared by homogenizing the first dispersion and the binder solution. Therefore, according to the present claim, when the second dispersion is prepared by homogenizing the first dispersion with a binder solution, components of a ceramic powder, one or more dispersing agents, and an organic acid are part of that mixture since those are the components that make up the first dispersion, as indicated in step c) of the present claim.

In the Response to Arguments section of the Final Office Action, the Examiner states that “claim 17 does not recite preparing a second dispersion by homogenizing the first dispersion with a binder solution consisting of a ceramic powder...” However, it is clear from the above that claim 17 does in fact recite preparing a second dispersion by homogenizing the first dispersion with a binder solution, *which contains components* of a ceramic powder.

The combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al. does not disclose or suggest these features. Osaka et al. relates to a method for preparing a ceramic green sheet including, ball milling a mixture of ceramic powder, solvent, and dispersant, and adding a binder and plasticizer to the mixture. Osaka et al. merely indicates homogeneously mixing a ceramic powder (zirconia or alumina) with a binder. Nowhere does Osaka et al. teach, or suggest, *preparing a second dispersion by homogenizing the first dispersion with a binder solution which contains components of a ceramic powder, one or more dispersing agents, an organic acid, at least one acrylate/methacrylate copolymer as the binder, and at least one softener*. Scheying et al., Drumm et al., and Nonninger et al. do not cure this deficiency.

In view of the foregoing, it is respectfully submitted that the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al. does not disclose or suggest all of the features of claim 17. As such, it is respectfully

submitted that the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al. does not render unpatentable claim 17.

Claims 19 to 22, and 28 to 32 depend from claim 17 and therefore include all of the features recited in claim 17. It is therefore respectfully submitted that the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al. does not render unpatentable these dependent claims for at least the same reasons set forth above in support of the patentability of claim 17.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

IV. Rejection of Claims 23, 33, and 34 Under 35 U.S.C. § 103(a)

Claims 23, 33, and 34 were rejected under 35 U.S.C. § 103(a) as unpatentable over Osaka et al. in view of Scheying et al., or Drumm et al., or Nonninger et al., further in view of WO 95/30503 (“McAlea et al.”). It is respectfully submitted that the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al., and McAlea et al. does not render unpatentable these claims for at least the following reasons.

Claims 23, 33, and 34 depend from claim 17 and therefore include all of the features recited in claim 17. As indicated above, the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al. does not disclose or suggest all of the features recited in claim 17. McAlea et al. is not relied upon as disclosing the features of claim 17 not disclosed or suggested by the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al. Indeed, McAlea et al. does not disclose, or even suggest, the features of claim 17 not disclosed or suggested by the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al.

As such, it is respectfully submitted that the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al., and McAlea et al. does not render unpatentable claims 23, 33, and 34.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

V. Rejection of Claims 18, 27, 35, and 36 Under 35 U.S.C. § 103(a)

Claims 18, 27, 35, and 36 were rejected under 35 U.S.C. § 103(a) as unpatentable over Osaka et al. in view of Scheying et al., or Drumm et al., or Nonninger et al., further in view of Journal of Materials Science 37 (2002), 926-934 (“Reddy et al.”). It is respectfully submitted that the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al., and Reddy et al. does not render unpatentable these claims for at least the following reasons.

Claims 18, 27, and 35 depend from claim 17 and therefore include all of the features recited in claim 17. As indicated above, the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al. does not disclose or suggest all of the features recited in claim 17. Reddy et al. is not relied upon as disclosing the features of claim 17 not disclosed or suggested by the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al. Indeed, Reddy et al. does not disclose, or even suggest, the features of claim 17 not disclosed or suggested by the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al.

As such, it is respectfully submitted that the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al., and Reddy et al. does not render unpatentable claims 18, 27, and 35.

Claim 36 relates to a piezo-multilayer actor which includes ceramic green compacts that are formed by performing methods that are analogous to the methods of claim 17, including, preparing a second dispersion by homogenizing the first dispersion and the binder solution. As such, it is respectfully submitted that the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al., and Reddy et al. does not render unpatentable claim 36 for at least the same reasons set forth above in support of the patentability of claim 17.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

VI. Rejection of Claims 24 to 26 Under 35 U.S.C. § 103(a)

Claims 24 to 26 were rejected under 35 U.S.C. § 103(a) as unpatentable over Osaka et al. in view of Scheying et al., or Drumm et al., or Nonninger et al., further in view of <http://pubs.acs.org/cen/topstory/8005/8005notw5.html> (“C&EN”) and

http://www2.mst.dk/common/Udgivramme/Frame.asp?http://www2.mst.dk/udgiv/publications/2001/87-7944-407-5/html/kap03_eng.htm (“DEPA”). It is respectfully submitted that the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al., and C&EN and DEPA, does not render unpatentable these claims for at least the following reasons.

Concerning DEPA, none of the statements made on page 5 of the Final Office Action sufficiently establish a date of publication with sufficient specificity to support the contention that it constitutes prior art against the present application. That “2001” appears in the web address

“http://www2.mst.dk/common/Udgivramme/Frame.asp?http://www2.mst.dk/udgiv/publications/2001/87-7944-407-5/html/kap03_eng.htm” does not establish the availability of DEPA as a printed publication in the year 2001 or otherwise. Contrary to the statement in the Final Office Action that “[o]n the web site, under Publication Description, the report was made public online on February 19, 2001,” the web page accessed at the address

“http://www2.mst.dk/common/Udgivramme/Frame.asp?http://www2.mst.dk/udgiv/publications/2001/87-7944-407-5/html/kolofon_eng.htm” merely indicates a “Version date” of “2001.02.19,” which does not necessarily establish a date of publication. Furthermore, that DEPA refers on its face to “Environmental Project No. 590 2001” does not necessarily indicate that DEPA was actually published in 2001 or otherwise. Finally, the statement in the “Forward” that “[t]he project was commenced in January 2000 and completed in December 2000” does not in any manner adequately establish a publication date. Accordingly, it is entirely unclear from the present record as to whether or not DEPA constitutes prior art against the present application.

Moreover, claims 24 to 26 depend from claim 17 and therefore include all of the features recited in claim 17. As indicated above, the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al. does not disclose or suggest all of the features recited in claim 17. C&EN and DEPA are not relied upon as disclosing the features of claim 17 not disclosed or suggested by the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al. Indeed, C&EN and DEPA do not disclose, or even suggest, the features of claim 17 not disclosed or suggested by the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al.

As such, it is respectfully submitted that the combination of Osaka et al., and Scheying et al. or Drumm et al. or Nonninger et al., and C&EN and DEPA does not render unpatentable claims 24 to 26.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

VII. Conclusion

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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